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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,598	01/18/2002	Bruce Ferguson	5650-02500	1137

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EXAMINER

AGWUMEZIE, CHARLES C

ART UNIT	PAPER NUMBER
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3621

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,598

Applicant(s)

FERGUSON ET AL.

Examiner

Charlie C. Agwumezie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/14/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-40 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-40 of copending

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Application No. 10/051,266. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Although the conflicting claims are not identical, they are not patentably distinct from each other. Claim 1 of the copending Patent application recites:

A data preprocessor for preprocessing input electronic commerce data for a support Vector machine, wherein the input data include one or more outlier values, comprising:

- an input buffer which is operable to receive and store the input electronic commerce data
- a data filter which is operable to detect and remove said one or more outlier values, thereby generating corrected input electronic commerce data
- an output device for outputting the corrected input electronic commerce data, said corrected input electronic commerce data comprising the input electronic commerce data to the non-linear model.

The claim in the current application differs from the copending application by simply substituting non-linear model used to control an electronic commerce system with a vector machine. A vector machine can be an example of a non-linear model. So the claims in the copending application are equivalent and/or comparable to the claims in the current application.

By providing a data preprocessor for preprocessing input data for a support vector machine instead of a data preprocessor for processing input electronic commerce data for a non-linear model used to control an electronic commerce system as recited in copending application does not make the claims patentably different.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the claims 1-40 of the copending application and include and/or in the alternative substitute the claimed data preprocessor for preprocessing input data for a support vector machine of the copending application with the data preprocessor for processing input electronic commerce data for a non-linear model used to control an electronic commerce system of the current application in order to further archive exclusivity to the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9, 11-19, 21-29 and 31-39, are rejected under 35 U.S.C. 102(b) as being anticipated by Tzes et al U.S. Patent 5, 444,820.

1. As per **claim 1**, Tzes et al discloses a data preprocessor for preprocessing input electronic commerce data for a non-linear model used to control an electronic

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commerce system, wherein the input electronic commerce data include one or more outlier values, comprising:

an input buffer which is operable to receive and store the input electronic commerce data (fig. 12 and 24, col. 1, lines 58-68, col. 3, lines 33-45, col. 7, lines 34-50, col. 11, lines 25-34);

a data filter which is operable to detect and remove said one or more outlier values, thereby generating corrected input electronic commerce data (fig. 7, 24 and 27; col. 5, lines 5-10, col. 7, lines 34-50, col. 17, lines 30-38); and

an output device for outputting the corrected input electronic commerce data, said corrected input electronic commerce data comprising the input electronic commerce data to the non-linear model (fig. 7 and 10, col. 7, lines 56-66, col. 24, lines 30-45).

2. As per claim 2, Tzes et al further discloses the data preprocessor, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained;

wherein the input electronic commerce data comprise training electronic commerce data, wherein said corrected input electronic commerce data comprise corrected training electronic commerce data including corrected target input electronic commerce data and corrected target output electronic commerce data (fig. 7 and 24); and

wherein the non-linear model is operable to be trained according to a predetermined training algorithm applied to said corrected target input electronic commerce data and said corrected target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the corrected target input electronic commerce data (fig. 25).

3. As per claim 3, Tzes et al further discloses the data preprocessor, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model have been trained to represent said system (fig. 25, col. 2, lines 53-65+);

wherein the input electronic commerce data comprise run-time electronic commerce data, and wherein said corrected input electronic commerce data comprise corrected run-time electronic commerce data (fig. 7,); and

wherein the non-linear model is operable to receive said corrected run-time electronic commerce data and generate run-time output electronic commerce data (col. 2, lines 53-68+),

wherein said run-time output electronic commerce data comprise one or both of control parameters for said electronic commerce system and predictive output information for said electronic commerce system (fig. 25, col. 2, lines 53-68+).

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4. As per **claim 4, 14, 24 and 34**, Tzes et al further discloses the data preprocessor, wherein said control parameters are usable to determine control inputs to said system for run-time operation of said system (col. 2, lines 53-68, col. 3, lines 1-5).

5. As per **claim 5, 15, 25 and 35**, Tzes et al further discloses the data preprocessor, wherein the data filter is further operable to replace said one or more outlier values with replacement values, wherein said corrected input includes said replacement values (fig. 11; col. 17, lines 30-38, 60-68, col. 24, lines 30-45).

6. As per **claim 6, 16, 26 and 36**, Tzes et al further discloses the data preprocessor, wherein the data filter is operable to replace said one or more outlier values using one or more of clipping, interpolation, extrapolation, spline fit, and sample/hold of a last prior value (col. 24, lines 30-45).

7. As per **claim 7 and 37**, Tzes et al further discloses the data preprocessor, further comprising: a graphical user interface (GUI) which is operable to receive user input specifying one or more data filtering operations to be performed on said input electronic commerce data, wherein said one or more data filtering operations operate to remove and/or replace said one or more outlier values (fig. 9; col. 3, lines 33-45, col. 24, lines 30-45).

8. As per **claim 8, 18 and 38**, Tzes et al further discloses the data preprocessor,

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wherein said GUI is further operable to display said input electronic commerce data prior to and after performing said filtering operations on said input electronic commerce data (fig. 9 and 12, col. 19, lines 11-19).

9. As per **claim 9, 19 and 39**, Tzes et al further discloses the data preprocessor, wherein said GUI is further operable to receive user input specifying a portion of said input electronic commerce data for said data filtering operations (fig. 9; col. 3, lines 33-45, col. 19, lines 1-10).

11. As per **claim 11**, Tzes et al discloses a method for preprocessing input electronic commerce data prior to input to a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, wherein the input electronic commerce data include one or more outlier values, the method comprising:

receiving and storing the input electronic commerce data (fig. 12);

analyzing said input electronic commerce data to determine said one or more outlier values (col. 24, lines 30-45);

removing said one or more outlier values, thereby generating corrected input electronic commerce data (fig. 7, col. 24, lines 30-45); and

outputting the corrected electronic commerce data, said corrected electronic commerce data comprising the input electronic commerce data to the non-linear model

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(fig. 7 and 10, col. 7, lines 56-66, col. 24, lines 30-45).

12. As per **claim 12 and 22**, Tzes et al further discloses the method, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained (fig. 24, 25 and 26); and

wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said corrected electronic commerce data comprise corrected training electronic commerce data including corrected target input electronic commerce data and corrected target output electronic commerce data (fig. 6 and 7; col. 2, lines 24-36, 53-68, col. 24, lines 30-45);

the method further comprising:

training the non-linear model according to a predetermined training algorithm applied to said corrected target input electronic commerce data and said corrected target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target input electronic commerce data (col. 2, lines 53-68, col. 3, lines 23-33, col. 8, lines 49-55, col. 24, lines 29-45).

13. As per **claim 13 and 23**, Tzes et al further discloses the method, wherein the

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non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model have been trained to represent said system (fig. 25, col. 8, lines 54-68); and

wherein the input electronic commerce data comprise run-time electronic commerce data, and wherein said corrected electronic commerce data comprise corrected run-time electronic commerce data (fig. 7, col. 5, lines 24-40, col. 24, lines 29-45);

the method further comprising:

inputting said run-time electronic commerce data into the non-linear model to generate run-time output electronic commerce data, wherein said run-time output electronic commerce data comprise one or both of control parameters for said system and predictive output information for said system (col. 5, lines 24-40, 45-55).

17. As per **claim 17**, Tzes et al further discloses the method, further comprising:

receiving user input specifying one or more data filtering operations to be performed on said input electronic commerce data, wherein said analyzing and said removing said one or more outlier values comprises performing said one or more data filtering operations on the input electronic commerce data (fig. 27; col. 24, lines 30-45).

21. As per **claim 21**, Tzes et al discloses a system for preprocessing input electronic commerce data for a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated

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with a portion of the input electronic commerce data, wherein the input electronic commerce data include one or more outlier values, comprising:

means for receiving and storing the input electronic commerce data (fig. 12);

means for analyzing said input electronic commerce data to determine said one or more outlier values (col. 24, lines 30-45);

means for removing said one or more outlier values, thereby generating corrected input electronic commerce data (fig. 7, col. 24, lines 30-45); and

means for outputting the corrected electronic commerce data, said corrected electronic commerce data comprising the input electronic commerce data to the non-linear model (fig. 7 and 10, col. 7, lines 56-66).

27. As per **claim 27**, Tzes et al further discloses the system, further comprising:

means for receiving user input specifying one or more data filtering operations to be performed on said input electronic commerce data, wherein said analyzing and said removing said one or more outlier values comprises performing said one or more data filtering operations on the input electronic commerce data (fig. 9; col. 3, lines 33-45)..

28. As per **claim 28**, Tzes et al further discloses the system, further comprising:

means for displaying said input electronic commerce data prior to and after performing said filtering operations on said input electronic commerce data (fig. 9 and 12, col. 19, lines 11-19).

29. As per **claim 29**, Tzes et al further discloses the system, further comprising:
means for receiving user input specifying a portion of said input electronic commerce data for said data filtering operations (fig. 9; col. 3, lines 33-45, col. 19, lines 1-10).

31. As per **claim 31**, Tzes et al discloses a carrier medium which stores program instructions for preprocessing input electronic commerce data prior to input to a non-linear model used to control an electronic commerce system, wherein said non-linear model comprises multiple inputs, each of the inputs associated with a portion of the input electronic commerce data, wherein the input electronic commerce data comprise one or more outlier values, wherein said program instructions are executable to:

receive and store the input electronic commerce data (fig. 12);

analyze said input electronic commerce data to determine said one or more outlier values (col. 24, lines 30-45);

remove said one or more outlier values, thereby generating corrected input electronic commerce data(col. 24, lines 30-45); and

output the corrected electronic commerce data, said corrected electronic commerce data comprising the input electronic commerce data to the non-linear model (fig. 7 and 10, col. 7, lines 56-66, col. 24, lines 30-45).

32. As per **claim 32**, Tzes et al further discloses the carrier medium, wherein the

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non-linear model includes a set of model parameters defining a representation of the electronic commerce system, said model parameters capable of being trained(fig. 24, 25 and 26); and

wherein the input electronic commerce data comprise training electronic commerce data including target input electronic commerce data and target output electronic commerce data, wherein said corrected electronic commerce data comprise corrected training electronic commerce data including corrected target input electronic commerce data and corrected target output electronic commerce data(fig. 6 and 7; col. 2, lines 24-36, 53-68, col. 24, lines 30-45);

wherein said program instructions are further executable to:

train the non-linear model according to a predetermined training algorithm applied to said corrected target input electronic commerce data and said corrected target output electronic commerce data to develop model parameter values such that said non-linear model has stored therein a representation of the electronic commerce system that generated the target output electronic commerce data in response to the target input electronic commerce data(col. 2, lines 53-68, col. 3, lines 23-33, col. 8, lines 49-55, col. 24, lines 29-45).

33. As per claim 33, Tzes et al further discloses the carrier medium, wherein the non-linear model includes a set of model parameters defining a representation of the electronic commerce system, wherein said model parameters of said non-linear model

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have been trained to represent said electronic commerce system(fig. 25, col. 8, lines 54-68); and

wherein the input electronic commerce data comprise run-time electronic commerce data, and wherein said corrected electronic commerce data comprise corrected run-time electronic commerce data(fig. 7, col. 5, lines 24-40, col. 24, lines 29-45);

wherein said program instructions are further executable to:

input said run-time electronic commerce data into the non-linear model to generate run-time output electronic commerce data, wherein said run-time output electronic commerce data comprise one or both of control parameters for said system and predictive output information for said system (col. 5, lines 24-40, 45-55).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 20, 30 and 40, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzes et al U.S. Patent 5,44,820 in view of Fishman et al U.S. Patent 6, 873, 979.

10. As per claims 10, 20, 30 and 40, Tzes et al failed to explicitly disclose the data preprocessor, wherein the input electronic commerce data comprise a plurality of variables, each of the variables comprising an input variable with an associated set of electronic commerce data wherein each of said variables comprises an input to said input buffer; and wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the non-linear model.

Fishman et al discloses the data preprocessor, wherein the input electronic commerce data comprise a plurality of variables, each of the variables comprising an input variable with an associated set of electronic commerce data wherein each of said variables comprises an input to said input buffer; and wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the non-linear model (col.1, lines 18-30, 33-45, col. 2, lines 63-68, col. 3, lines 17-37).

Accordingly it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the system of Tzes et al and provide data preprocessor, wherein the input electronic commerce data comprise a plurality of variables, each of the variables comprising an input variable with an associated set of electronic commerce data wherein each of said variables comprises an input to said input buffer; and wherein each of at least a subset of said variables comprises a corresponding one of the inputs to the non-linear model in view of the teachings of Fishman et al in order to ensure optimal prediction of the system.

Conclusion

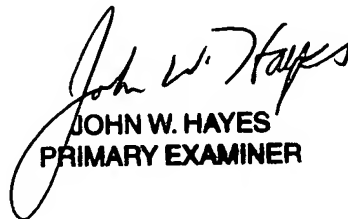
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The reference cited Schneider et al U.S. patent 6,819,746 is a documented considered relevant to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Agwumezie whose number is (571) 272-6838. The examiner can normally be reached on Monday – Friday 8:00 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell can be reached on (571) 272 – 6712. The fax phone number for the organization where the application or proceeding is assigned is (703) 305-7687.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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April 18, 2005


JOHN W. HAYES
PRIMARY EXAMINER